

CLAIMS

1. A process for producing a luminescent glass, comprising the steps of adsorbing, to a porous high silica glass, at least one metal component selected from the group consisting of elements of Groups IIIA, IVA, VA, VIA, VIIA, VIII, IB, IIB and IVB of the Periodic Table; and thereafter heating the porous glass in a reducing atmosphere.
2. A process according to Claim 1, wherein the metal component to be adsorbed to the porous high silica glass is at least one member selected from the group consisting of elements of the fourth period of the Periodic Table, elements of the fifth period of the Periodic Table, and lanthanoids.
3. A process according to Claim 2, wherein the metal component to be adsorbed to the porous high silica glass is at least one member selected from the group consisting of V, Cr, Mn, Fe, Co, Ni, Cu, Ag, Sn, Eu, Ce and Tb.
4. A process according to Claim 1, wherein the metal component to be adsorbed to the porous high silica glass is a rare earth element or elements.
5. A process according to Claim 1, wherein the metal component to be adsorbed to the porous high silica glass is at least one metal component selected from the group consisting of elements of Groups IVA, VA, VIA, VIIA, VIII, IB, IIB and IVB.
6. A process according to Claim 1, wherein the heating temperature is 900 to 1600°C.
7. A process according to Claim 1, further comprising, before the heating step, the step of adsorbing, to the porous glass, at least one element selected from the group consisting of B, N, F, Al, P and S.
8. A process according to Claim 1, wherein the porous high silica glass is obtained by causing phase separation of an alkali borosilicate glass by heat treatment and then treating the phase-separated glass with an acid.
9. A luminescent glass prepared by a process according to any one of Claims 1 to 8.

10. A luminescent glass according to Claim 9,  
comprising at least 96 wt.% of SiO<sub>2</sub>, 0.5 to 3 wt.% of B<sub>2</sub>O<sub>3</sub>, 0.1 to  
1.5 wt.% of Al<sub>2</sub>O<sub>3</sub>, and 50 to 2000 ppm of at least one metal  
component selected from the group consisting of elements of  
5 Groups IIIA, IVA, VA, VIA, VIIA, VIII, IB, IIB and IVB of the  
Periodic Table.

11. A lighting system for use in water or air,  
comprising the luminescent glass according to Claim 9 and an  
ultraviolet light source.

10           12. A lighting system comprising the luminescent glass  
according to Claim 9 disposed in water; an ultraviolet light  
source placed outside water; and an optical fiber provided so  
that one end of the optical fiber connected to the ultraviolet  
light source and the other end is located in the vicinity of the  
15 luminescent glass.

13. A display device comprising as a luminous body a  
luminescent glass according to Claim 9.